Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (currently amended): A method of forming a metal container of defined shape and lateral dimensions, comprising

(a) disposing a hollow metal preform having a closed end in a die cavity laterally enclosed by a die wall defining said shape and lateral dimensions, with only a single, movable punch, said punch being located at one end of the cavity and translatable into the cavity, the preform closed end being positioned in proximate facing relation to the punch and at least a portion of the preform being initially spaced inwardly from the die wall;

(b) subjecting the preform to internal fluid pressure to expand the preform outwardly into substantially full contact with the die wall, thereby to impart said defined shape and lateral dimensions to the preform, said fluid pressure exerting force, on said closed end, directed toward said one end of the cavity; and

(c) translating the punch into the cavity to engage and displace the closed end of the preform in a direction opposite to the direction of force exerted by fluid pressure thereon, deforming the closed end of the preform.

Claim 2 (canceled)

Claim 3 (original): A method according to claim 1, wherein the punch is moved into contact with the closed end of the preform before commencing expansion of the preform and the contact is maintained throughout the expansion of the preform.

Claim 4 (original): A method according to claim 1, wherein said punch has a contoured surface, the closed end of the preform being deformed so as to conform to said contoured surface.

Claim 5 (original): A method according to claim 1, wherein said defined shape is a bottle shape including a neck portion and a body portion larger in lateral dimensions than the neck portion, said die cavity having a long axis, said preform having a long axis and being disposed substantially coaxially with said cavity in step (a), and said punch being translatable along the long axis of the cavity.

Claim 6 (original): A method according to claim 5, wherein said punch has a domed contour, and wherein step (c) deforms said closed end of said preform into said domed contour.

Claim 7 (original): A method according to claim 5, wherein said die wall comprises a split die separable for removal of the formed container following step (c).

Claim 8 (original): A method according to claim 7, wherein said defined shape is asymmetric about said long axis of said cavity.

Claim 9 (original): A method according to claim 5, wherein said punch is initially positioned, at the start of step (b), to limit axial lengthening of the preform by said fluid pressure.

Claim 10 (canceled)

Claim 11 (original): A method according to claim 5, wherein said preform is an elongated and initially generally cylindrical

workpiece having an open end opposite said closed end and is substantially equal in diameter to said neck portion of said bottle shape.

Claim 12 (original): A method according to claim 11, wherein said workpiece has sufficient formability to be expandable to said defined shape in a single pressure forming operation.

Claim 13 (original): A method according to claim 11, including a preliminary steps of placing the workpiece in a die cavity smaller than the first-mentioned die cavity and subjecting the workpiece therein to internal fluid pressure to expand the workpiece to an intermediate size and shape smaller than said defined shape and lateral dimensions, before performing steps (a), (b) and (c).

Claim 14 (canceled)

Claim 15 (original): A method according to claim 1, wherein said preform is an aluminum preform.

Claims 16 - 19 (canceled)

Claim 20 (original): A method according to claim 1, wherein step (b) comprises simultaneously applying internal positive fluid pressure and external positive fluid pressure to the preform in the cavity, said internal positive fluid pressure being higher than said external positive fluid pressure.

Claim 21 (canceled)

Claim 22 (original): A method according to claim 3, wherein heat is applied to the preform by way of heating means in the punch to thereby induce a temperature gradient to the preform commencing at the closed bottom and extending upwardly.

Claim 23 (canceled)

Claim 24 (original): A method according to claim 22, wherein heat is applied to the preform by way of heating means in the side walls of the die.

Claims 25 - 31 (canceled)

Claim 32 (original): A method according to claim 1, wherein the die wall comprises die structure having upper and lower portions and wherein heat is applied to the preform by two groups of heating elements respectively incorporated in the upper and lower portions of the die structure and under independent temperature control for controlling temperature gradient in the preform.

Claim 33 (original): A method according to claim 1, wherein heat is applied to the preform by a heating element disposed within the preform substantially coaxially therewith.

Claim 34 (original): A method according to claim 33 wherein heat is further supplied to the preform by heating the punch.

Claims 35 - 45 (canceled)

Claim 46 (new): A method according to claim 1, wherein said fluid pressure is provided by gas.

Claim 47 (new): A method of forming a metal container of defined shape and lateral dimensions, comprising

(a) disposing a hollow metal preform having a closed end in a die cavity laterally enclosed by a die wall defining said shape and lateral dimensions, with a punch located at one end of the cavity and translatable into the cavity, the preform closed end being positioned in proximate facing relation to the punch and at least a portion of the preform being initially spaced inwardly from the die wall;

(b) subjecting the preform to internal gas pressure to expand the preform outwardly into substantially full contact with the die wall, thereby to impart said defined shape and lateral dimensions to the preform, said gas pressure exerting force, on said closed end, directed toward said one end of the cavity; and

(c) translating the punch into the cavity to engage and displace the closed end of the preform in a direction opposite to the direction of force exerted by gas pressure thereon, deforming the closed end of the preform.